## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Appellant(s): Martina Hanck et al.
Appl. No.: 09/402,144
Conf. No.: 5593
Filed: September 29, 1999
Title: METHOD AND SYSTEM FOR PRODUCING AND CHECKING A HASH
TOTAL FOR DIGITAL DATA GROUPED IN SEVERAL DATA SEGMENTS
Art Unit: 2132
Examiner: Jung W. Kim
Docket No.: 112740-466

MAIL STOP AF
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

## PRE-APPEAL BRIEF REQUEST FOR REVIEW

Sir:

This request is submitted in response to the Final Office Action dated June 27, 2007. This request is filed contemporaneously with USPTO form PTO/SB/33, "Pre-Appeal Brief Request for Review" and form PTO/SB/31, "Notice of Appeal."

**Remarks** begin on page 2 of this paper.

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## REMARKS

Claims 1-3, 10-12, 22-33 and 37-48 are pending in the present application. Claims 1-3, 10-12, 22-33, 37-48 were rejected under 35 U.S.C. §103(a) as being unpatentable over *Kilner* (US Patent 5,649,089) in view of *Frezza et al.* (US Patent No. 4,982,430) and *McNamara* (US Patent 4,533,948). As is explained below, Appellant respectfully submits the current rejections are improper and should be withdrawn.

As argued previously, none of the cited art, alone or in combination teaches or suggests the feature of performing a commutative operation on segment checksums, wherein flow control for the data segments is negated by the commutative operation. Under the claimed configuration, by using the commutative operation for individual checksums of the data segments, flow control for the order of the individual data segments is no longer required.

In contrast, *Kilner* proposes a cumulative checksum process that relies on flow control of individual data segments (col. 1, lines 41-55; col. 2, lines 44-55; col. 3, lines 51-65), as each checksum is specifically directed to changes in specific places of a record database and affiliating an old checksum value from the cumulative checksum (see claim 1). Kilner discloses the real time tracking of changes to redundant databases, where a data communication system has an active controller 112 and a standby controller 115 (FIG. 1). The standby controller 115 assumes the role of the active controller in the event that the active controller experiences a failure within the system. Kilner discloses that , in the case where the active controller becomes disabled, the standby controller must be capable of performing the functions of the active controller, and "in order to effectively and efficiently perform the function of the active controller, the standby controller must be a substantially exact duplicate of the active controller, thus a redundant or standby database controller system must exist" (col. 2, lines 19-25). Thus, to track modifications in the databases, Kilner relies on virtual checksums to affirm an active checksum with a standby checksum in a record database (col. 2, lines 35-55).

While the Final Office Action argues that checksums A_CRC, V_CRC and S_CRC are not dependent on the ordering of the data, Appellant maintains that the redundant databases requires the system in Kilner to perform cumulative checksums on the database (DB) with the

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(identical or "mirror image") standby DB to track changes and to set-up the reversible record checksum (col. 3, lines 52-65; see col. 4, lines 66-67). The present claims recite performing a commutative operation on segment checksums, which is not taught or suggested in Kilner. Each of the checksums (A_CRC, V_CRC and S_CRC) are disclosed as being cumulative checksums (col. 3, lines 52-65; see claim 1: all checksums are "cumulative"). While the Final Office Action argues that Kilner discloses a commutative checksum (i.e., that the "cumulative checksum" appears in name only - see page 3, paragraph 4), Appellant respectfully submits this is incorrect.

The Office Action cites col. 3, lines 52-55 and the XOR operation as the equivalent of the claimed commutative checksum. However, Appellant points out that the XOR operation is only applied to the reversible incorporation of record checksums (R_CRC), where the checksums are "backed in" and "backed out" of the A_CRC checksum, which is disclosed as the "cumulative checksum of the entire DB for substantially real time tracking changes to a database" (col. 3, lines 53-55). The R_CRC checksum then, must rely on flow control, since the individual records must be ordered to update the record numbers in the A_CRC (col. 4, lines 27-54).

Furthermore, the CRC's of Kilner are not disclosed as having any cryptographic characteristics. The entire disclosure of Kilner is concerned with preventing "lock out" and maintaining the integrity of a database associated with a standby controller when multiple changes are effected on the database record and corresponding backup (col. 1, lines 17-27, 41-54). Nothing in the disclosure of Kilner addresses cryptographic security. In the previous response, it was argued that Kilner "secures" the database by performing the CRC check with an XOR function on two identical databases (col. 4, .lines 66-67). Thus, an alteration to one of the databases would trigger a reset/resync in the system (col. 5, lines 3-7). The Office Action fails to explain how the record checksum (R_CRC, ref. 124) has any hashing or cryptographic characteristics.

Frezza and McNamara fail to solve the deficiencies of Kilner as well. *Frezza* deals with a configuration for securely downloading data from a remote site, where booter data for a CATV system is downloaded to a terminal to establish subscriber identity (col. 4, lines 18-36) The checksum is merely performed to merely validate the user to establish a communication link (col. 5, line 39 - col. 6, line 19). The disclosure in McNamara merely discloses a conventional

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DES encryption/decryption scheme which secures a connection over a data channel on a CATV system (col. 7, lines 26-42; col. 8, lines 36-48). The Office Action does not explain how Frezza or McNamara could possibly be incorporated into the redundant database system of Kilner. The redundancy checksum of Kilner (R_CRC) merely bridges the "old" record with the "new" record checksum in a cumulative manner (but not commutatively) to resolve updated data records (col. 4, lines (col. 4, lines 27-54).

Appellant submits that there is no apparent reason to combine the references in the manner suggested in the Office Action. "[A] patent composed of several elements is not proved obvious merely by demonstrating that each of its elements was, independently, known in the prior art." KSR Int'l Co. v. Teleflex Inc. 550 U.S. ___ (2007). The Office Action fails to provide a valid reason why a person of ordinary skill in the art would have combined the prior art elements in the manner claimed. The Office Action states that it would have been obvious to make the combination "to prevent an unauthorized modification of a transmitted message" (page 5, lines 5-7; page 6, paragraph 13, et al.). However, as explained above, Kilner does not appear to have anything to do with the external transmission of messages, but only appears to disclose a system for internally resolving updates to redundant databases. Kilner is not concerned with who is modifying the messages - the disclosure in Kilner only addresses whether or not the databases are consistent with their content (col. 2, lines 44-56).

For at least these reasons, Appellant respectfully submits the rejections are improper and should be reversed. In light of the above, Appellant respectfully submit that claims 1-3, 10-12, 22-33 and 37-48 are allowable. Appellants respectfully submit that the patent application is in condition for allowance and request a Notice of Allowance be issued. The Commissioner is authorized to charge and credit Deposit Account No. 02-1818 for any additional fees associated with the submission of this Response. Please reference docket number 112740-466.

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Respectfully submitted,
BELL, BOYD & LLOYD LLC

BY _____
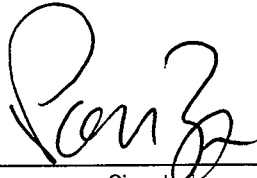
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Dated: September 27, 2007

Doc Code: AP.PRE.REQ

# PRE-APPEAL BRIEF REQUEST FOR REVIEW

| Docket Number (Optional) |
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| 112740-466 |

| I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to "Mail Stop AF, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450" [37 CFR 1.8(a)]<br><br>on _____<br><br>Signature_____<br><br>Typed or printed<br>name _____ | Application Number<br><br>09/402,144 | Filed<br><br>September 29, 1999 |
|---|---|---|
| | First Named Inventor<br><br>Martina Hanck et al. | |
| | Art Unit<br><br>2132 | Examiner<br><br>Jung W. Kim |

Applicant requests review of the final rejection in the above-identified application. No amendments are being filed with this request.

This request is being filed with a notice of appeal.

The review is requested for the reason(s) stated on the attached sheet(s).
      Note: No more than five (5) pages may be provided.

I am the

☐ applicant/inventor.

☐ assignee of record of the entire interest.
See 37 CFR 3.71. Statement under 37 CFR 3.73(b) is enclosed.
(Form PTO/SB/96)

☒ attorney or agent of record. 48,196
Registration number _____.

☐ attorney or agent acting under 37 CFR 1.34.

Registration number if acting under 37 CFR 1.34 _____

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September 27, 2007
_____
Date

NOTE: Signatures of all the inventors or assignees of record of the entire interest or their representative(s) are required.
Submit multiple forms if more than one signature is required, see below*.

☒ *Total of ___1___ forms are submitted.